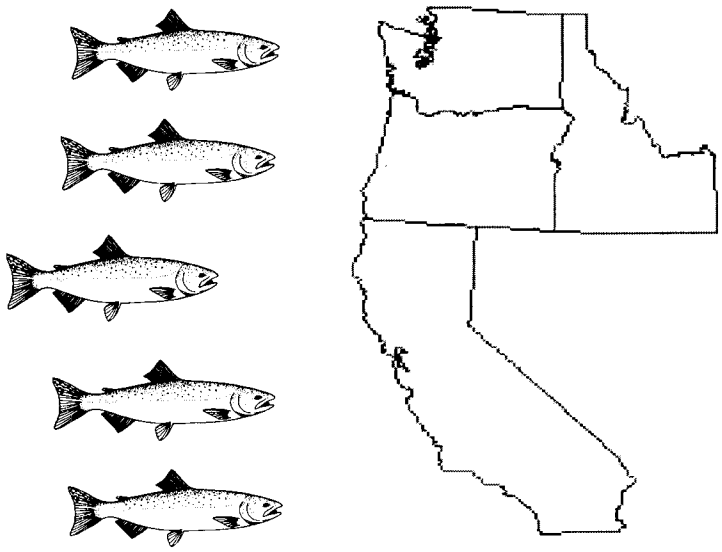
PRESEASON REPORT III

ANALYSIS OF COUNCIL ADOPTED MANAGEMENT MEASURES FOR 2002 OCEAN SALMON FISHERIES

PREPARED BY THE
SALMON TECHNICAL TEAM AND COUNCIL STAFF



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LIST OF ACRONYMS AND ABBREVIATIONS

AEQ	Adult equivalent exploitation rate
CDFG	California Department of Fish and Game
Council	Pacific Fishery Management Council
CWT	coded-wire tag
EA	Environmental Assessment
EIS	Environmental Impact Statement
ESA	Endangered Species Act
ESU	evolutionarily significant unit
FMP	fishery management plan
FR	*Federal Register*
FRAM	Fishery Regulation Assessment Model
KFMC	Klamath Fishery Management Council
KMZ	Klamath management zone
KOHM	Klamath River Ocean Harvest Model
LRH	lower river hatchery (tule fall chinook returning to hatcheries below Bonneville Dam)
MCB	Mid-Columbia River brights (hatchery bright fall chinook released in the mid-Columbia River)
MSP	Maximum sustainable production
MSY	Maximum sustainable yield
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
ODFW	Oregon Department of Fish and Wildlife
OCN	Oregon coastal natural (coho)
PFMC	Pacific Fishery Management Council
PSC	Pacific Salmon Commission
PST	Pacific Salmon Treaty
RK	Rogue/Klamath (hatchery coho)
SCH	Spring Creek Hatchery (tule fall chinook returning to Spring Creek Hatchery)
SAS	Salmon Advisory Subpanel
SOC	South of Pt. Arena, California, fishery impact cell of the KOHM
SRFI	Snake River fall (chinook) index
STT	Salmon Technical Team
URB	upper river brights (bright fall chinook normally migrating past McNary Dam)
WCVI	West Coast Vancouver Island
WDFW	Washington Department of Fish and Wildlife

INTRODUCTION

This is the last in a series of three preseason reports prepared by the Pacific Fishery Management Council's (Council) Salmon Technical Team (STT) and staff. The reports document and help guide salmon fishery management in the exclusive economic zone from 3 to 200 nautical miles off the coasts of Washington, Oregon, and California, and within state territorial waters. This report analyzes the impacts of the 2002 ocean salmon fishery management measures adopted by the Council for submission to the Secretary of Commerce. A biological evaluation of expected impacts on stocks listed under the Endangered Species Act (ESA) is included in Appendix A. An environmental assessment of the proposed management measures has also been prepared (PFMC 2002).

ADOPTED MANAGEMENT MEASURES

The Council's recommendations for the 2002 ocean salmon fishery regulations meet or exceed the objectives of the *Pacific Coast Salmon Plan* (salmon FMP), obligations under the Pacific Salmon Treaty (PST), and the level of protection required by all consultation standards for salmon species listed under the ESA. The following figures and tables describe the 2002 Council-adopted management measures:

Table 1 - non-Indian commercial management measures, pages 8-11;
Figure 1 - geographic outline of commercial troll (non-Indian) ocean salmon seasons, page 12;
Table 2 - recreational management measures, pages 13-15;
Figure 2 - geographic outline of recreational salmon seasons, page 16;
Table 3 - treaty Indian commercial management measures, page 17; and
Table 4 - allowable catch quotas for chinook and coho, page 18.

In addition, Tables 5, 6, and 7 provide information on the biological impacts and landing estimates for the Council's management recommendations. Table 8 displays the expected mark (healed adipose fin clip) rate for coho encountered in mark-selective fisheries. Tables 9 and 10, and Figures 3 and 4 provide information on the economic impacts of the proposed fisheries. A report on the effort predictor used in 2002 for areas south of Horse Mt., California is included in Appendix B.

The 2002 seasons are constrained primarily by (1) management goals for naturally produced coho salmon over the entire Council management area, including Oregon and California coastal stocks, which are listed under the ESA; lower Columbia River coho, which are listed as endangered under the Oregon State-ESA; and Puget Sound and Interior Fraser (B.C.) coho which are subject to provisions of the PST, and (2) endangered Sacramento River winter chinook south of Point Arena, California. Constraints for Snake River fall chinook have not become a limiting factor in 2002, primarily because of continued restrictions in Canadian fisheries. The previous rebuilding exploitation rate (RER) limit established by the National Marine Fisheries Service (NMFS) for lower Columbia River natural tule chinook of 65% was updated to 49% for 2002. Council area and inside fisheries did not exceed the new RER limit. Both recreational and non-Indian commercial coho retention fisheries are again made possible through the use of mark-selective fisheries for coho marked with healed adipose fin clips. The 2002 season provides the Council's fourth year of extensive mark-selective coho fisheries.

Regulations and expected fishing patterns for the treaty-Indian troll fisheries were developed by the Hoh, S'Klallam, Makah, Quileute, and Quinault tribes for their respective fisheries. The Council recommendations include continuation of the encounter rate study to be conducted by the Makah Tribe in the Cape Flattery area. The purpose of the study is to estimate encounter rates of chinook and coho salmon during troll fisheries directed at each species. All fish with clipped adipose fins will be retained and fish that are taken during periods when the treaty troll fishery is operating will be counted towards the treaty troll quota.

INSEASON MANAGEMENT

Some management measures may be modified through inseason action by NMFS after consultation with the Council Chair, affected management agencies, and pertinent tribes and public (e.g., changing the days or number of days of recreational fishing allowed per calendar week; or modifying open areas, quotas, bag limits, and species retention limits). Inseason changes must meet the Council's salmon fishery management plan (FMP) goals, especially in regard to conservation and allocation goals and federally-recognized Indian fishing rights.

It is anticipated that the Oregon Department of Fish and Wildlife (ODFW) will permit late-season, chinook-only fisheries in certain areas within state waters in addition to the seasons shown in Tables 1 and 2. Potential seasons include commercial and recreational fisheries at the mouths of the Chetco and Elk Rivers and at the mouth of Tillamook Bay. The State of Washington may also establish limited recreational fisheries in state waters if they avoid additional impacts on critical coho and/or chinook stocks.

Council intent generally advocates that state-water fisheries have the same basic regulations as adjacent federal waters, particularly if open simultaneously; however, the Oregon State-water fishery off Tillamook Bay may allow the use of barbed hooks to be consistent with inside regulations.

NEW MANAGEMENT MEASURES

Off California

Commercial Measures

Implementation of a new Klamath Ocean Harvest Model (KOHM), a moderate abundance of Klamath River fall chinook, and NMFS' 2002 biological opinion for Sacramento River winter chinook allowed for an expansion of commercial fishing opportunity off the coast of California. The biological opinion limits the timing and duration of fishing seasons south of Point Arena, but allows for some expansion of commercial opportunity within those limits. The Council's desire to protect lower Columbia River natural coho, an Oregon state-listed species, resulted in management measures north of Pt. Arena which are more restrictive than required to meet other FMP or ESA conservation objectives. Nonetheless, there is for the first time in many years, an August fishery in the California portion of the KMZ (Oregon/California border to Humboldt south Jetty), a July and August fishery off Fort Bragg (Horse Mt. to Pt. Arena), and a May through September fishery off San Francisco (Pt. Arena to Pigeon Pt., which includes Bodega Bay).

Recreational Measures

Oregon Coastal Natural (OCN) coho, which was used as a surrogate for lower Columbia River natural coho, was the main constraining stock for Oregon and California fisheries, and was the reason for all but two days of July being closed in the KMZ (Humbug Mt. to Horse Mt.) and the two week July closure off Fort Bragg (Horse Mt. to Pt. Arena). The minimum size limit south of Horse Mt. will be 24 inches total length through April 30 and 20 inches thereafter.

Mark-Selective Coho Fisheries off Washington and Oregon

Until recently, adipose fin clips (the adipose fin is the small fleshy fin on the back of the fish just ahead of the tail) have been used exclusively to mark fish that contain coded-wire tags. This mark is now used to provide a way of harvesting hatchery stocks while reducing impacts on wild fish. The mark-selective fisheries will be extensively monitored by the state fishery agencies to evaluate their performance as a management tool.

As in 2001, the all-salmon recreational fisheries off Washington and Oregon, as far south as Humbug Mt. (Port Orford), are selective for coho with healed adipose fin clips. Retention of coho in the non-Indian, all-salmon commercial troll fishery north of Cape Falcon is also restricted to coho with a healed adipose fin clip. The implementation of mark-selective restrictions began in the 1998 recreational season at the mouth of the Columbia River and was expanded in 1999 to all recreational fisheries north of Cape Falcon and to a limited,

all-salmon season in the recreational fishery off central Oregon. Implementation of mark-selective restrictions in the non-Indian troll fishery north of Cape Falcon began in 2000.

Additional New Measures North of Cape Falcon

Commercial Measures

To protect threatened Puget Sound chinook stocks, the Cape Flattery Control Zone is in effect during all non-Indian commercial fisheries. During July through September, most fisheries require large plugs only and prohibit coho retention. The only mark-selective commercial fishery is provided by small quota of coho with healed adipose fin clips for the Leadbetter Point to Cape Falcon area beginning August 1.

Recreational Measures

To protect threatened Puget Sound chinook stocks, retention of chinook is prohibited east of the Bonilla-Tatoosh line from July through September while the ocean fishery is open in Area 4 (Neah Bay area west of the Bonilla-Tatoosh line and north of Cape Alava). Tillamook Head to Cape Falcon closes August 1 to reduce impacts on the northern component of threatened OCN coho. Additional constraints on OCN impacts occurred as a protective measure for lower Columbia River natural coho, which are listed as endangered under the Oregon State-ESA.

The most significant changes from 2001 regulations include the opening of an all-salmon-except-coho recreational fishery in May and June, and later opening dates for all salmon recreational fisheries in the summer.

ESTIMATED SALMON STOCK IMPACTS OF ADOPTED MANAGEMENT MEASURES

Procedures and assumptions employed in the evaluation of regulatory impacts are reviewed and maintained by the STT. In modeling non-retention and mark-selective fishery impacts, the Council has adopted hook-and-release mortality (HRM) rates of 26% for the commercial fishery, 14% for recreational fishery north of Pt. Arena, California, and 23% for the recreational fishery south of Pt. Arena. The HRM rate of 14% for the recreational fishery north of Pt. Arena was adopted in 2001 and is the result of a comprehensive review by the STT. The HRM rate of 23% for the recreational fishery south of Pt. Arena is based on the proportion of mooching and trolling gear used in the fishery during 2001, and the HRMs of 42.2% and 14% for these two respective gear types. In addition, a drop-off mortality impact is applied to all fisheries. Generally this impact is calculated as 5% of the landed catch or 5% of estimated encounters for non-retention fisheries.

CHINOOK SALMON ASSESSMENT

Ocean chinook harvest quotas are summarized in Table 4. Table 5 lists expected ocean spawner escapements and other key chinook management criteria, including allocation of Klamath River fall chinook and data relevant to meeting consultation standards for ESA listed stocks. Expected ocean harvest and incidental non-retention mortality are provided in Table 6. Further details of fishery impacts on stocks listed under the ESA are provided in Appendix A.

South of Cape Falcon

Considerations in shaping the chinook fisheries in this area include the protection of ESA listed Sacramento River winter and California Coastal chinook (Appendix A) and achievement of fall chinook spawning escapement goals for the Klamath, Sacramento, and Oregon coastal rivers. In 2002, chinook fisheries in this area were constrained to achieve management goals for coastal Oregon and California natural coho stocks listed as threatened under the federal ESA and for lower Columbia River natural coho listed as endangered by Oregon under their state ESA (as monitored through OCN and Rogue/Klamath (RK) hatchery coho stocks).

U.S.-Mexico Border to Horse Mountain

Central Valley (primarily Sacramento River) fall chinook is the Council's primary management unit in this area. Under the adopted management measures, the projected spawning escapement for Sacramento River fall chinook is 298,500 adult fish, compared to the 2001 spawner escapement of 537,100 adults. This is well above the spawner escapement goal range of 122,000 to 180,000 hatchery and natural fall chinook adults combined. The Council's desire to protect lower Columbia River natural coho, an Oregon State-listed species, resulted in management measures between Pt. Arena and Horse Mt. (Fort Bragg) more restrictive than required to meet other FMP or ESA conservation objectives, thus preventing full harvest access to Central Valley fall chinook. Ocean commercial and recreational fisheries in this area are expected to land 404,800 and 130,900 chinook, respectively. The expected harvest for the commercial season is 233% of that observed in 2001, while the expected recreational catch is 155% of that observed in 2001.

Horse Mountain to Humbug Mountain

This area is designated as the Klamath management zone (KMZ) because the primary stock of concern is Klamath River fall chinook. The ocean escapement of Klamath River fall chinook in 2002 is projected to be 132,600 adults. After river tribal and recreational fishery impacts, the total number of spawners is expected to be 57,000 adults, of which 35,000 adults are expected to spawn in natural areas.

Management constraints for Klamath River fall chinook usually affect the shaping of many fisheries from central Oregon to central California, as well as inside tribal and recreational fisheries. Therefore, the Council, with assistance from the Klamath Fishery Management Council (KFMC), identifies several specific harvest allocation objectives for this stock. The Council's proposed regulations allocate:

- 50% (50,400 fish) of the available Klamath River fall chinook harvest to the Indian tribes of the Klamath-Trinity River Basin with federally recognized fishing rights (Yurok and Hoopa Valley tribes);
- 59.5% (30,000 fish) of the non-Indian harvest of Klamath River fall chinook to the ocean fishery;
- 40.7% (20,500 fish) of the non-Indian harvest of Klamath River fall chinook to the Klamath River recreational fishery; and
- 11.0% (3,300 fish) of the ocean allocation for the KMZ ocean recreational fishery.

The Council's recommendations result in a projected California/Oregon sharing of adult Klamath River fall chinook harvest of 49%/51%, respectively, in ocean troll fisheries. This California/Oregon split is the result of constraints to protect lower Columbia River natural coho (an Oregon State-ESA listed species) in the 2002 season, and is not intended to represent a Council allocation directive or to apply in future years. In addition, these coho constraints prevented ocean fisheries from fully accessing the allowable harvest of Klamath River fall chinook under both FMP and federal ESA constraints.

Ocean commercial and recreational fisheries in the KMZ are expected to land a total of 19,500 and 21,900 chinook (all stocks), respectively. The recreational prediction is slightly less than the estimated catch in 2001; however, the commercial prediction is roughly twice the 2001 landings.

Humbug Mountain to Cape Falcon

The primary chinook stocks of concern for this area originate in northern California and Oregon coastal river systems. Sacramento River fall chinook also contribute significantly to the harvest. The ocean escapement of these stocks in 2002 is expected to be sufficient to provide for estuary and freshwater fisheries and meet the spawner escapement goal (Table 5).

Chinook impacts in this area are primarily associated with the commercial fisheries as recreational fishing effort is generally focused on coho. Recreational coho fishing was closed from 1994 to 1998 and reopened to limited mark-selective harvest of coho with a healed adipose fin clip in 1999. For 2002, the commercial chinook fishery opens March 20 and continues through October 31, with closed periods in July and August.

The purpose of the sixteen-day closure in July is to reduce incidental non-retention mortality of OCN coho, which serve as a surrogate for lower Columbia River natural coho stocks (an Oregon State-ESA listed stock). The closure of two days at the end of August assists in accurately accounting for Klamath River fall chinook impacts occurring prior to September 1. After August, most mature fish are no longer available to ocean fisheries and impacts at that time primarily affect ocean escapement in the following year. Ocean harvests after September 1 are counted against the allowable harvest for the following year. As in recent years, commercial troll gear restrictions have also been recommended to reduce coho impacts (Table 1).

North of Cape Falcon

Management objectives for chinook fisheries in this area are to comply with consultation standards established for ESA-listed stocks, meet treaty Indian sharing obligations, and to the extent possible, provide for viable ocean and inriver fisheries while meeting hatchery fall chinook brood stock needs. Lower Columbia River and Bonneville Pool hatchery fall chinook have historically been the major contributors to ocean fishery catches in the Council area north of Cape Falcon. Management constraints for ESA-listed stocks, especially OCN coho, combined with low abundance levels of Oregon Production Index hatchery coho, constrained ocean fisheries in this area. FMP spawner escapement objectives are expected to be met for all stocks except Queets spring/summer, Willapa Bay fall, and upper Columbia summer chinook; however, Council area fisheries have minimal (<5% exploitation rate) impacts on these stocks. NMFS consultation standards for ESA-listed stocks are expected to be met.

The ocean non-Indian commercial troll and recreational quotas in this area provide for landings of 82,500 chinook in the commercial fishery and 67,500 chinook in the recreational fishery, about three times the actual combined chinook landings in 2001. The 2002 treaty-Indian troll quota is 60,000 compared to 37,000 in 2001. The coho quotas are 5,000, 109,700, and 60,000 in the non-Indian commercial, recreational, and treaty-Indian troll fisheries, respectively, representing substantial decreases in quotas from 2001 (Table 6).

The treaty-Indian commercial troll fishery is expected to land its quota of 60,000 chinook in ocean management areas and Area 4B combined (Table 3). The landings result from a chinook-directed fishery in May and June (under a quota of 30,000 chinook) and the all-salmon season beginning in July with a 30,000 chinook quota. There is no roll-over of any chinook that are not harvested during the May-June chinook-directed fishery. The expected 2002 harvest would be an increase from the 2001 quota level of 37,000 and the 2001 observed harvest of 28,100 (Table 6).

COHO SALMON ASSESSMENT

Ocean coho harvest quotas are summarized in Table 4. Table 5 lists expected ocean spawner escapements and other key coho management criteria, including data relevant to meeting consultation standards for ESA-listed stocks. Expected coho harvest and incidental non-retention mortality are provided in Table 6. Table 7 provides a detailed accounting of impacts on OCN and RK coho by fishery. Further details of the fishery impacts on stocks listed under the ESA are provided in Appendix A. Table 8 provides estimates of the percentage of marked coho encountered in selective fisheries that allow retention of coho with healed adipose fin clips.

South of Cape Falcon

All natural coho stocks produced south of Cape Falcon are listed under the federal ESA. Allowable coho harvest impacts in this area are based on meeting NMFS ESA consultation standards for three separate evolutionarily significant units (ESUs) of threatened natural Oregon and California coastal coho (Appendix A). NMFS guidance requires that the three northern OCN coho stock components (the northern-most ESU) be managed in accordance with Amendment 13 of the salmon FMP and the recommendations of the OCN Coho Work Group (accepted by the Council as expert biological advice at the November 2000 Council meeting). For this ESU in 2002, the federal ESA limits the exploitation rate in marine and freshwater fisheries combined to 15% or less; however, ODFW recommended an OCN exploitation rate in marine and freshwater areas of no more than 12.5% as a surrogate protective measure for the conservation of lower Columbia River natural coho, which are listed as endangered under the Oregon State-ESA. For 2002, NMFS guidance for the two

southern ESUs (southern Oregon/northern California coastal and central California coastal coho) required limiting harvest impacts in marine waters to 13% or less, as measured by impacts on RK hatchery coho stocks.

Under the adopted recommendations, the combined marine and freshwater OCN coho exploitation rate is projected to be 12.3%, less than the 15.0% limit under Amendment 13 and the OCN Coho Work Group matrix, and less than 12.5% as recommended by ODFW for protection of lower Columbia River natural coho (Oregon State-ESA listed) (Table 7). The number of OCN coho spawners in 2002 is projected to be 63,300 adults. This compares with 151,900 adults observed in 2001. The marine exploitation rate for RK hatchery coho is projected to be 7.5%. At present, there are no preseason spawner projections for either southern Oregon/northern California or central California coastal coho ESUs. Ocean escapement of the early and late hatchery stocks of Columbia River coho are expected to be sufficient to meet hatchery egg-take goals (Table 5).

The south of Cape Falcon ocean fishery is structured primarily to minimize OCN coho impacts while exploiting harvestable chinook and hatchery coho stocks. To allow greater harvest of abundant chinook stocks, coho retention is prohibited for the commercial and recreational fisheries in this area, except for a mark-selective recreational fishery of 22,500 coho with healed adipose fin clips between Cape Falcon and Humbug Mt. open July 7 through August 4. In 2001, the mark-selective fishery was limited to 55,000 coho with healed adipose fin clips.

In addition to the recreational quota for 22,500 coho marked with healed adipose fin clips, the estimated non-retention (drop-off plus hook-and-release) mortality for non-Indian ocean commercial and recreational fisheries in the area south of Cape Falcon is 8,900 and 10,100 coho, respectively (Table 6). Relative to 2001, harvest of coho with healed adipose fin clips and nonretention fisheries south of Cape Falcon represent increased commercial and recreational impacts on OCN coho. The allowable harvest levels in 2002 fisheries, however, were less than in 2001, due largely to reduced hatchery coho abundance and constraints on OCN and lower Columbia River natural coho.

North of Cape Falcon

Coho fisheries north of Cape Falcon are constrained by management objectives and treaty-Indian obligations for individual stock management units. For 2002, the federal ESA limits the exploitation rate on OCN coho in marine and freshwater fisheries combined to 15% or less. ODFW, however, recommended an OCN exploitation rate in marine and freshwater areas of no more than 12.5% as a surrogate protective measure for the conservation of lower Columbia River natural coho, which are listed as endangered under the Oregon State-ESA. Additionally, ocean and Puget Sound fisheries were structured to constrain total exploitation rates on Interior Fraser coho below 10% in accordance with the provisions of the southern coho management plan adopted by the Pacific Salmon Commission in February, 2002. Ocean escapements for the pertinent coho stocks under the proposed regulations are presented in Table 5. Ocean escapement levels for all natural coho stocks are expected to meet or exceed their long-term spawner escapement goals or the management objectives adopted by state and tribal co-managers. The actual spawner escapements will be determined by the combined impact of ocean and inside fisheries. Management objectives in 2002 for these stocks have been agreed to by state and tribal co-managers under the terms of pertinent U.S. District Court orders. Ocean escapements of early and late Columbia River hatchery stocks are projected to be sufficient to meet normal egg-take goals, treaty Indian obligations, and to allow some harvest opportunity in non-Indian fisheries.

For 2002, coho retention in all non-Indian troll and recreational ocean fisheries north of Cape Falcon is limited to fish with healed adipose fin clips. Coho quotas of 5,000 and 109,700 fish with healed adipose fin clips have been established for the non-Indian commercial and recreational fisheries, respectively. The total allowable harvest by the non-Indian commercial and recreational fisheries for 2002 is just less than half the level allowed under 2001 regulations. The treaty Indian troll fishery quota for 2002 is 60,000 coho, compared to a quota of 90,000 in 2001.

SOCIOECONOMIC IMPACTS OF PROPOSED REGULATIONS

This section provides economic impact estimates for expected non-Indian fishing activities under the Council's proposed ocean commercial and recreational fishery regulations. Economic costs and benefits associated with changes in levels of ocean escapement (costs and benefits of spawner escapement and inside harvest) are not included. No attempt is made to estimate the economic value of the treaty-Indian commercial catch, although these landings do generate personal income for the local and state economies. The procedures and methods used to analyze the economic impacts follow those documented in previous recent preseason reports and the annual reviews of ocean salmon fisheries.

The economic effects of the proposed options for non-Indian fisheries are shown in Tables 9 and 10. Table 9 shows troll impacts expressed in terms of estimates of potential exvessel value, and Table 10 shows recreational impacts in terms of trips generated and coastal community personal income expected to be associated with the recreational fishery under each option. The exvessel values provided for the troll fishery options in Table 9 and income impact values provided for the recreational fishery options in Table 10 are not directly comparable.

Figures 3 and 4 show estimated coastal community income impacts for both the troll and recreational options compared to historic impacts in real (inflation adjusted) dollars.

TABLE 1. Council-Adopted **Non-Indian commercial troll** management measures for ocean salmon fisheries, 2002.
(Page 1 of 4)

A. SEASON DESCRIPTION

North of Cape Falcon

Supplementary Management Information:

1. Overall non-Indian TAC: 150,000 chinook and 140,000 coho.
   Trade: 10,000 coho to recreational fishery for 2,500 chinook.
2. Non-Indian Troll TAC: 82,500 chinook and 25,000 coho.
3. Treaty Indian commercial ocean troll quotas of: 60,000 chinook (30,000 in May and June; 30,000 for all-salmon season in July through Sept. 15 with no rollover allowed from chinook season); and 60,000 coho.

U.S.-Canada Border to Cape Falcon

May 1 through earlier of June 30 or 50,000 chinook quota. All salmon except coho (C.6). See gear restrictions (C.2.a). Cape Flattery and Columbia Control Zones closed (C.4.a, C.4.b). Vessels must land and deliver their fish within the area, in adjacent areas closed to commercial non-Indian salmon fishing, or in areas south of Cape Falcon , and within 24 hours of any closure of this fishery; State regulations require that fishers fishing within this area and intending to land salmon south of Cape Falcon notify ODFW before they leave the area at the following phone number (541) 867-0300 Ex. 252. Inseason actions may modify quotas or harvest guidelines in later fisheries to achieve or prevent exceeding the overall allowable troll harvest impacts (C.7.a).

Except as provided below during the selective fishery, the season will be: July 1 through earlier of Sept. 8 or 32,500 chinook quota (C.7.a). All salmon except coho, and no chum retention north of Cape Alava during August and September. Gear restricted to plugs 6 inches or longer between U.S.-Canada Border to Leadbetter Point (C.2.b). Cape Flattery and Columbia Control Zones closed (C.4.a, C.4.b). Vessels must land and deliver their fish within the area, in adjacent areas closed to commercial non-Indian salmon fishing, or in areas south of Cape Falcon, and within 24 hours of any closure of this fishery. No more than four spreads per line between Cape Falcon and Leadbetter Point (C.2.c). Trip limits, gear restrictions, and guidelines may be implemented or adjusted inseason (C.7.a).

Selective fishery for adipose fin clipped coho

Leadbetter Point to Cape Falcon - All salmon Aug. 1 through earlier of Sept. 8 or subarea quota of 5,000 adipose fin clipped coho (all retained coho must have a healed adipose fin clip). Fishery will remain open for all salmon except coho after the coho quota is reached, provided adequate chinook impacts remain on the 32,500 chinook quota. Washington state regulations require fishers fishing within this subarea to land **coho** south of Leadbetter Point. Oregon state regulations require that fishers fishing within this subarea and intending to land **chinook or coho** south of this subarea notify ODFW before they leave the subarea at the following phone number (541) 867-0300 Ex. 252. Trip limits, gear restrictions, and guidelines may be implemented or adjusted inseason.

South of Cape Falcon

Cape Falcon to Florence South Jetty

March 20 through July 15; Aug. 1 through Aug. 29; and Sept. 1 through Oct. 31. All salmon except coho. See gear restrictions (C.2.a, C.2.d) and Oregon State regulations for a description of the closed area at the mouth of Tillamook Bay.

In 2003 the season will open March 15 for all salmon except coho. This opening could be modified following Council review at its November 2002 meeting.

Florence South Jetty to Humbug Mt.

March 20 through June 30; July 17 through Aug. 29; and Sept. 1 through Oct. 31. All salmon except coho. See gear restrictions (C.2.a, C.2.d).

In 2003 the season will open March 15 for all salmon except coho. This opening could be modified following Council review at its November 2002 meeting.

TABLE 1. Council-Adopted **Non-Indian commercial troll** management measures for ocean salmon fisheries, 2002. (Page 2 of 4)

A. SEASON DESCRIPTION (Continued)

Humbug Mt. to OR-CA Border

March 20 through May 31. All salmon except coho. See gear restrictions (C.2.a, C.2.d).

June 1 through earlier of June 30 or 3,000 chinook quota; July 1 through earlier of July 31 or 1,500 chinook quota; Aug. 1 through earlier of Aug. 29 or 3,000 chinook quota; and Sept. 1 through earlier of Sept. 30 or 2,000 chinook quota. No transfer of remaining quota from earlier fisheries allowed. All salmon except coho. Possession and landing limit of 50 fish per trip. See gear restrictions (C.2.a, C.2.d). All salmon must landed and delivered to Gold Beach, Port Orford, or Brookings, and within 24 hours of closure.

In 2003 the season will open March 15 for all salmon except coho. This opening could be modified following Council review at its November 2002 meeting.

OR-CA Border to Humboldt South Jetty

Aug. 16 through the earlier of August 30 or 3,000 chinook quota and Sept. 1 through earlier of Sept. 30 or 10,000 chinook quota. All salmon except coho. Possession and landing limit of 40 fish per day. See gear restrictions (C.2.a, C.2.e). All fish must be landed within the area and within 24 hours of any closure of the fishery. When the fishery is closed between the OR-CA border and Humbug Mt. and open to the south, vessels with fish on board caught in the open area off California may seek temporary mooring in Brookings, Oregon, prior to landing in California only if such vessels first notify the Chetco River Coast Guard Station via VHF channel 22A between the hours of 0500 and 2200 and provide the vessel name, number of fish on board, and estimated time of arrival. Klamath Control Zone closed (C.4.c).

Horse Mt. to Pt. Arena (Fort Bragg)

July 20 through earlier of July 30 or 10,000 chinook quota; Aug. 1 through Aug. 30; and Sept. 1 through Sept. 30. All salmon except coho. All fish caught in this area in July and Aug. must be landed within the area. All fish caught in this area must be landed within 24 hours of any closure of the fishery. See gear restrictions (C.2.a, C.2.e).

Pt. Arena to Pigeon Point (San Francisco)

May 1 through Sept. 30. All salmon except coho. Minimum size limit 26 inches total length. See gear restrictions (C.2.a, C.2.e).

Pt. Reyes to Pt. San Pedro (Fall Area Target Zone)

Oct. 1 through Oct. 18, Monday through Friday. All salmon except coho. Minimum size limit 26 inches total length. See gear restrictions (C.2.a, C.2.e).

Pigeon Pt. to U.S.-Mexico Border

May 1 through Sept. 30. All salmon except coho. Minimum size limit 26 inches total length. See gear restrictions (C.2.a, C.2.e).

B. MINIMUM SIZE (Inches)

Area (when open)	Chinook		Coho		Pink
	Total Length	Head-off	Total Length	Head-off	
North of Cape Falcon	28.0	21.5	16.0	12.0	None
South of Cape Falcon	26.0[a/]	19.5[a/]	-	-	None

a/ Chinook not less than 26 inches total length (19.5 inches head-off) taken in open seasons south of Cape Falcon may be landed north of Cape Falcon only when the season is closed north of Cape Falcon.

C. REQUIREMENTS, DEFINITIONS, RESTRICTIONS, OR EXCEPTIONS

C.1. Compliance with Minimum Size or Other Special Restrictions: All salmon on board a vessel must meet the minimum size or other special requirements for the area being fished and the area in which they are landed if that area is open. Salmon may be landed in an area that is closed only if they meet the minimum size or other special requirements for the area in which they were caught.

C.2. Gear Restrictions:

a. Single point, single shank, barbless hooks are required in all fisheries.

b. *U.S. Canada Border to Leadbetter Point, July 1 to September 8:* Gear restricted to plugs with a one piece body that is at least six inches long, not including hooks or attachments.

c. *Leadbetter Point to Cape Falcon, July 1 to September 8*: No more than 4 spreads are allowed per line.

Spread defined: A single leader connected to an individual lure or bait.

d. *Off Oregon South of Cape Falcon*: No more than 4 spreads are allowed per line.

e. *Off California:* No more than 6 lines are allowed per vessel and barbless **circle** hooks are required when fishing with bait by any means other than trolling.

Circle hook defined: A hook with a generally circular shape and a point which turns inward, pointing directly to the shank at a 90° angle.

Trolling defined: Fishing from a boat or floating device that is making way by means of a source of power, other than drifting by means of the prevailing water current or weather conditions.

C.3. Transit Through Closed Areas with Salmon on Board: It is unlawful for a vessel to have troll or recreational gear in the water while transiting any area closed to fishing for a certain species of salmon, while possessing that species of salmon; however, fishing for species other than salmon is not prohibited if the area is open for such species and no salmon are in possession.

C.4. Control Zone Definitions:

a. *Cape Flattery Control Zone (Figure 2)* - The area from Cape Flattery (48°23'00" N lat.) to the northern boundary of the U.S. EEZ; and the area from Cape Flattery south to Cape Alava, 48°15'00" N lat. and east of 125° 05'00" W long.

b. *Columbia Control Zone (Figure 3)* - An area at the Columbia River mouth, bounded on the west by a line running northeast/southwest between the red lighted Buoy #4 (46°13'35" N. Lat., 124°06'50" W. long.) and the green lighted Buoy #7 (46°15'09' N. lat., 124°06'16" W. long.); on the east, by the Buoy #10 line which bears north/south at 357° true from the south jetty at 46°14'00" N. lat.,124°03'07" W. long. to its intersection with the north jetty; on the north, by a line running northeast/southwest between the green lighted Buoy #7 to the tip of the north jetty (46°15'48" N. lat., 124°05'20" W. long.) and then along the north jetty to the point of intersection with the Buoy #10 line; and, on the south, by a line running northeast/southwest between the red lighted Buoy #4 and tip of the south jetty (46°14'03" N. lat., 124°04'05" W. long.), and then along the south jetty to the point of intersection with the Buoy #10 line.

c. *Klamath Control Zone* - The ocean area at the Klamath River mouth bounded on the north by 41°38'48" N. lat. (approximately 6 nautical miles north of the Klamath River mouth); on the west, by 124°23'00" W. long. (approximately 12 nautical miles off shore); and, on the south, by 41°26'48" N. lat. (approximately 6 nautical miles south of the Klamath River mouth).

C.5. Notification When Unsafe Conditions Prevent Compliance with Regulations: If prevented by unsafe weather conditions or mechanical problems from meeting special management area landing restrictions, vessels must notify the U.S. Coast Guard and receive acknowledgment of such notification prior to leaving the area. This notification shall include the name of the vessel, port where delivery will be made, approximate amount of salmon (by species) on board and the estimated time of arrival.

TABLE 1. Council-Adopted **Non-Indian commercial troll** management measures for ocean salmon fisheries, 2002.
(Page 4 of 4)

C. REQUIREMENTS, DEFINITIONS, RESTRICTIONS, OR EXCEPTIONS (Continued)

C.6. Incidental Halibut Harvest: During authorized periods, the operator of a vessel that has been issued an incidental halibut harvest license may retain Pacific halibut caught incidentally in Area 2A while trolling for salmon. Halibut retained must be no less than 32 inches in measured from the tip of the lower jaw with the mouth closed to the extreme end of the middle of the tail, and must be landed with the head on. License applications for incidental harvest must be obtained from the International Pacific Halibut Commission (phone 206-634-1838). Applicants must apply prior to April 1 of each year. Incidental harvest is authorized only during **May and June** troll seasons and after June 30 if quota remains and if announced on the NMFS hotline (phone 800-662-9825). ODFW and WDFW will monitor landings. If the landings are projected to exceed the 39,300 pound preseason allocation or the total Area 2A non-Indian commercial halibut allocation, NMFS will take inseason action to close the incidental halibut fishery.

License holders may land no more than 1 halibut per each 3 chinook, except 1 halibut may be landed without meeting the ratio requirement, and no more than 35 halibut may be landed per trip.

C.7. Inseason Management: In addition to standard inseason actions or modifications already noted under the season description, the following inseason guidance is provided to NMFS:

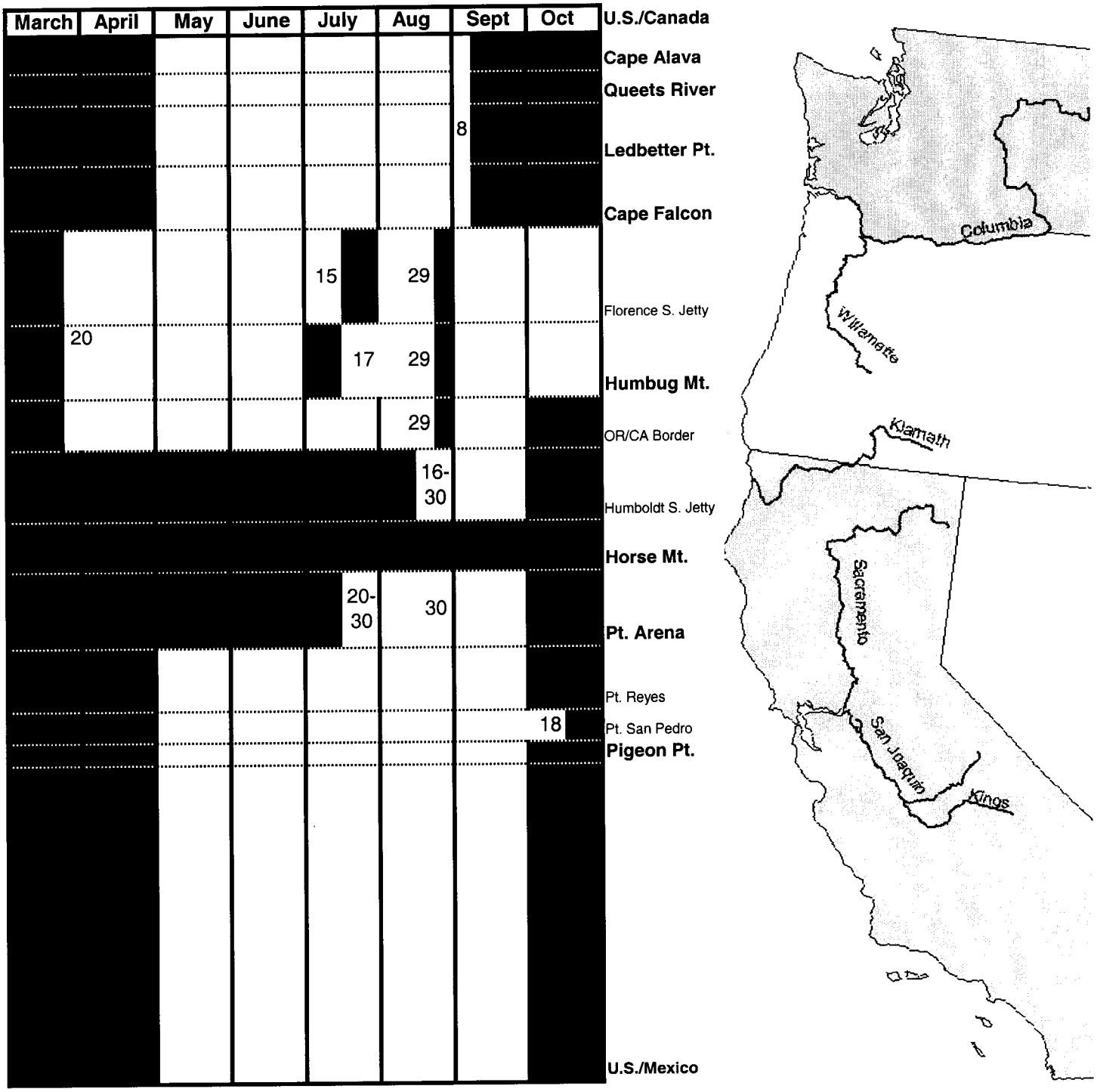
a. In the overall non-Indian commercial chinook quota north of Cape Falcon, 20,000 chinook from the May/June harvest quota are the result of impacts assessed at the July-September harvest impact rate. Inseason, these 20,000 chinook (or remaining portion thereof) may be transferred to the July-September harvest guideline at a one-to-one rate if not caught in the May/June fishery. Any chinook remaining in the May/June harvest guideline in excess of 20,000 may be transferred to the July-September harvest guideline on a fishery impact equivalent basis.

b. At the March 2003 meeting, the Council will consider inseason recommendations to open commercial seasons for all salmon except coho prior to May 1 in areas off Oregon and Washington north of Cape Falcon.

C.8. Consistent with Council management objectives, the State of Oregon may establish additional late-season, chinook-only fisheries in state waters. Check state regulations for details.

C.9. For the purposes of CDFG Code, Section 8232.5, the definition of the \KMZ for the ocean salmon season shall be that area from Humbug Mt., Oregon to Horse Mt., California.

FIGURE 1. Non-Indian commercial troll salmon seasons, 2002.



A. SEASON DESCRIPTION

North of Cape Falcon

Supplementary Management Information:

1. Overall non-Indian TAC: 150,000 chinook and 140,000 coho.
   Trade: 2,500 chinook to non-Indian troll for 10,000 coho.
2. Recreational TAC: 67,500 chinook and 115,000 coho.
3. No Area 4B add-on fishery.
4. Buoy 10 fishery opens Aug. 1 with an expected landed catch of 19,000 adipose fin clipped coho.

U.S.-Canada Border to Cape Falcon

May 25 through earlier of June 16 or 20,000 chinook quota (7 days per week) (C.4.a). Chinook salmon only; 2 fish per day. See gear restrictions (C.2.a). Columbia Control Zone closed (C.3.a).

U.S.-Canada Border to Cape Alava (Neah Bay Area)

July 7 through earlier of Sept. 8 or 11,780 coho subarea quota, 7 days per week. All salmon, except during August and September no chum retention; 2 fish per day and all retained coho must have a healed adipose fin clip. Chinook non-retention east of the Bonilla-Tatoosh line during the Council managed recreational ocean fishery in July through September (C.3.c). Inseason management may be used to sustain season length and keep harvest within a guideline of 2,600 chinook (C.4).

Cape Alava to Queets River (La Push Area)

July 7 through earlier of Sept. 8 or 2,770 coho subarea quota; Sept. 21 through earlier of Oct. 6 or overall subarea quota of 100 coho and 100 chinook; 7 days per week. All salmon; 2 fish per day and all retained coho must have a healed adipose fin clip. See gear restrictions (C.2.a). Inseason management may be used to sustain season length and keep harvest within a guideline of 1,600 chinook (C.4).

Queets River to Leadbetter Pt. (Westport Area)

June 30 through earlier of Sept. 8 or 39,280 coho subarea quota. Sun. through Thurs. prior to Aug. 16, 7 days per week thereafter. All salmon. 2 fish per day and all retained coho must have a healed adipose fin clip. See gear restrictions (C.2.a). Inseason management may be used to sustain season length and keep harvest within a guideline of 32,000 chinook (C.4).

Leadbetter Pt. to Cape Falcon (Columbia River Area)

July 7 through earlier of Sept. 30 or 55,700 coho subarea quota. Sun. through Thurs. prior to Aug. 16, 7 days per week beginning Aug. 16. All salmon. Two fish per day and all retained coho must have a healed adipose fin clip. Closed between Cape Falcon and Tillamook Head beginning Aug.1. Columbia Control Zone closed (C.3.a). See gear restrictions (C.2.a). Inseason management may be used to sustain season length and keep harvest within a guideline of 11,200 chinook (C.4).

South of Cape Falcon

Cape Falcon to Humbug Mt.

Except as provided below during the selective fishery, the season will be: Apr. 1 through Oct. 31. All salmon except coho; 2 fish per day. See gear restrictions (C.2.a, C.2.b). See Oregon State regulations for a description of a closure at the mouth of Tillamook Bay.

In 2003 the season will open March 15 for all salmon except coho. Two fish per day. Same gear restrictions as in 2002. This opening could be modified following Council review at its November 2002 meeting.

A. SEASON DESCRIPTION (Continued)

South of Cape Falcon (Continued)

Selective fishery for marked coho:

July 7 through earlier of Aug. 4 or a landed catch of 22,500 coho; 7 days per week . All salmon; 2 fish per day, all retained coho must have a healed adipose fin clip. See gear restrictions (C.2.a, C.2.b). Open days may be adjusted to utilize the available quota. All salmon except coho season reopens the earlier of Aug. 5 or attainment of the coho quota.

Humbug Mt. to Horse Mt. (Klamath Management Zone)

May 15 through June 30; July 3 and 4; and Aug. 1 through Sept. 15. All salmon except coho; 2 fish per day; no more than 6 fish in 7 consecutive days. See gear restrictions (C.2.a, C.2.b). Klamath Control Zone closed in August (C.3.b).

Horse Mt. to Pt. Arena (Fort Bragg)

Feb. 16 through July 7 and July 20 through Nov. 17. All salmon except coho; 2 fish per day. Minimum size 24 inches total length through April 30 and 20 inches total length thereafter. See gear restrictions (C.2.a, C.2.b, C.2.c).

In 2003, season opens Feb. 15 (nearest Sat. to Feb. 15) for all salmon except coho. 2 fish per day, 24 inch total length minimum size limit and the same gear restrictions as in 2002.

Pt. Arena to Pigeon Pt. (San Francisco)

Apr. 13 through Nov. 10. All salmon except coho; 2 fish per day. Minimum size limit 24 inches total length through April 30 and 20 inches total length thereafter. See gear restrictions (C.2.a, C.2.b, C.2.c).

In 2003, the season will open Apr. 12 for all salmon except coho. 2 fish per day, 24 inch minimum size limit and the same gear restrictions as in 2002.

Pigeon Pt. to U.S.-Mexico Border

Mar. 30 through Sept. 29. All salmon except coho; 2 fish per day. Minimum size limit 24 inches total length through April 30 and 20 inches total length thereafter. See gear restrictions (C.2.a, C.2.b, C.2.c).

In 2003, the season will open Mar. 29 for all salmon except coho. Two fish per day, 24 inch minimum size limit and the same gear restrictions as in 2002.

B. MINIMUM SIZE (Total Length in Inches)

Area (when open)	Chinook	Coho	Pink
North of Cape Falcon	24.0	16.0	None
Cape Falcon to Horse Mt.	20.0	16.0	None, except 20.0 off CA
South of Horse Mt. Prior to May 1	24.0	-	20.0
Beginning May 1	20.0	-	20.0

C. REQUIREMENTS, DEFINITIONS, RESTRICTIONS, OR EXCEPTIONS

C.1. Compliance with Minimum Size and Other Special Restrictions: All salmon on board a vessel must meet the minimum size or other special requirements for the area being fished, and the area in which they are landed if that area is open. Salmon may be landed in an area that is closed only if they meet the minimum size or other special requirements for the area in which they were caught.

C.2. Gear Restrictions: All persons fishing for salmon, and all persons fishing from a boat or floating device with salmon on board must meet the gear restrictions listed below for specific areas or seasons.

C. REQUIREMENTS, DEFINITIONS, RESTRICTIONS, OR EXCEPTIONS (Continued)

a. *U.S.-Canada Border to Pt. Conception, California*: No more than one rod may be used per angler and single point, single shank barbless hooks are required for all fishing gear. [Note: ODFW regulations in the state-waters fishery off Tillamook Bay may allow the use of barbed hooks to be consistent with inside regulations.]

b. *Between Cape Falcon , Oregon and Point Conception, California*: Anglers must use no more than 2 single point, single shank, barbless hooks.

c. *Off California between Horse Mt. and Pt. Conception*: Single point, single shank, barbless **circle** hooks (see circle hook definition below) must be used if angling with bait by any means other than trolling and no more than 2 such hooks shall be used. When angling with 2 hooks, the distance between the hooks must not exceed 5 inches when measured from the top of the eye of the top hook to the inner base of the curve of the lower hook, and both hooks must be permanently tied in place (hard tied). Circle hooks are not required when artificial lures are used without bait.

Circle hook defined: A hook with a generally circular shape and a point which turns inward, pointing directly to the shank at a 90° angle.

Trolling defined: Angling from a boat or floating device that is making way by means of a source of power, other than drifting by means of the prevailing water current or weather conditions.

C.3. Control Zone Definitions:

a. *Columbia Control Zone (Figure 3)* - An area at the Columbia River mouth, bounded on the west by a line running northeast/southwest between the red lighted Buoy #4 (46°13'35" N. Lat., 124°06'50" W. long.) and the green lighted Buoy #7 (46°15'09' N. lat., 124°06'16" W. long.); on the east, by the Buoy #10 line which bears north/south at 357° true from the south jetty at 46°14'00" N. lat.,124°03'07" West. long. to its intersection with the north jetty; on the north, by a line running northeast/southwest between the green lighted Buoy #7 to the tip of the north jetty (46°15'48" N. lat., 124°05'20" W. long.) and then along the north jetty to the point of intersection with the Buoy #10 line; and, on the south, by a line running northeast/southwest between the red lighted Buoy #4 and tip of the south jetty (46°14'03" N. lat., 124°04'05" W. long.), and then along the south jetty to the point of intersection with the Buoy #10 line.

b. *Klamath Control Zone* - The ocean area at the Klamath River mouth bounded on the north by 41°38'48" N. lat. (approximately 6 nautical miles north of the Klamath River mouth); on the west, by 124°23'00" W. long. (approximately 12 nautical miles off shore); and, on the south, by 41°26'48" N. lat. (approximately 6 nautical miles south of the Klamath River mouth).

c. The Bonilla-Tatoosh Line is defined as: A line running from the western end of Cape Flattery to Tatoosh Island Lighthouse (48°23'30" N. lat., 124°44'12" W. long.) to the buoy adjacent to Duntze Rock (48°28'00" N. lat., 124°45'00" W. long.), then in a straight line to Bonilla Point (48°35'30" N. lat., 124°43'00" W. long.) on Vancouver Island, B.C.

C.4. Inseason Management: Regulatory modifications may become necessary inseason to meet preseason management objectives such as quotas, harvest guidelines, and season duration. Actions could include modifications to bag limits or days open to fishing, and extensions or reductions in areas open to fishing. NMFS may transfer coho inseason among recreational subareas north of Cape Falcon to help meet the recreational season duration objectives (for each subarea) after conferring with the states, Council, representatives of the affected ports, and the Salmon Advisory Subpanel recreational representatives north of Cape Falcon.

In addition, the following guidance is provided to NMFS:

a. In the overall recreational chinook quota north of Cape Falcon, 10,000 chinook from the May/June harvest quota are the result of impacts assessed at the July-September harvest impact rate. Inseason, these 10,000 chinook (or remaining portion thereof) may be transferred to the July-September harvest guideline at a one-to-one rate if not caught in the May/June fishery. Any chinook remaining in the May/June harvest guideline in excess of 10,000 may be transferred to the July-September harvest guideline on a fishery impact equivalent basis.

C.5. Additional Seasons in State Territorial Waters: Consistent with Council management objectives, the states of Washington and Oregon may establish limited seasons in state waters. Oregon state-water fisheries are limited to chinook salmon. Check state regulations for details.

FIGURE 2. Recreational salmon seasons, 2002.

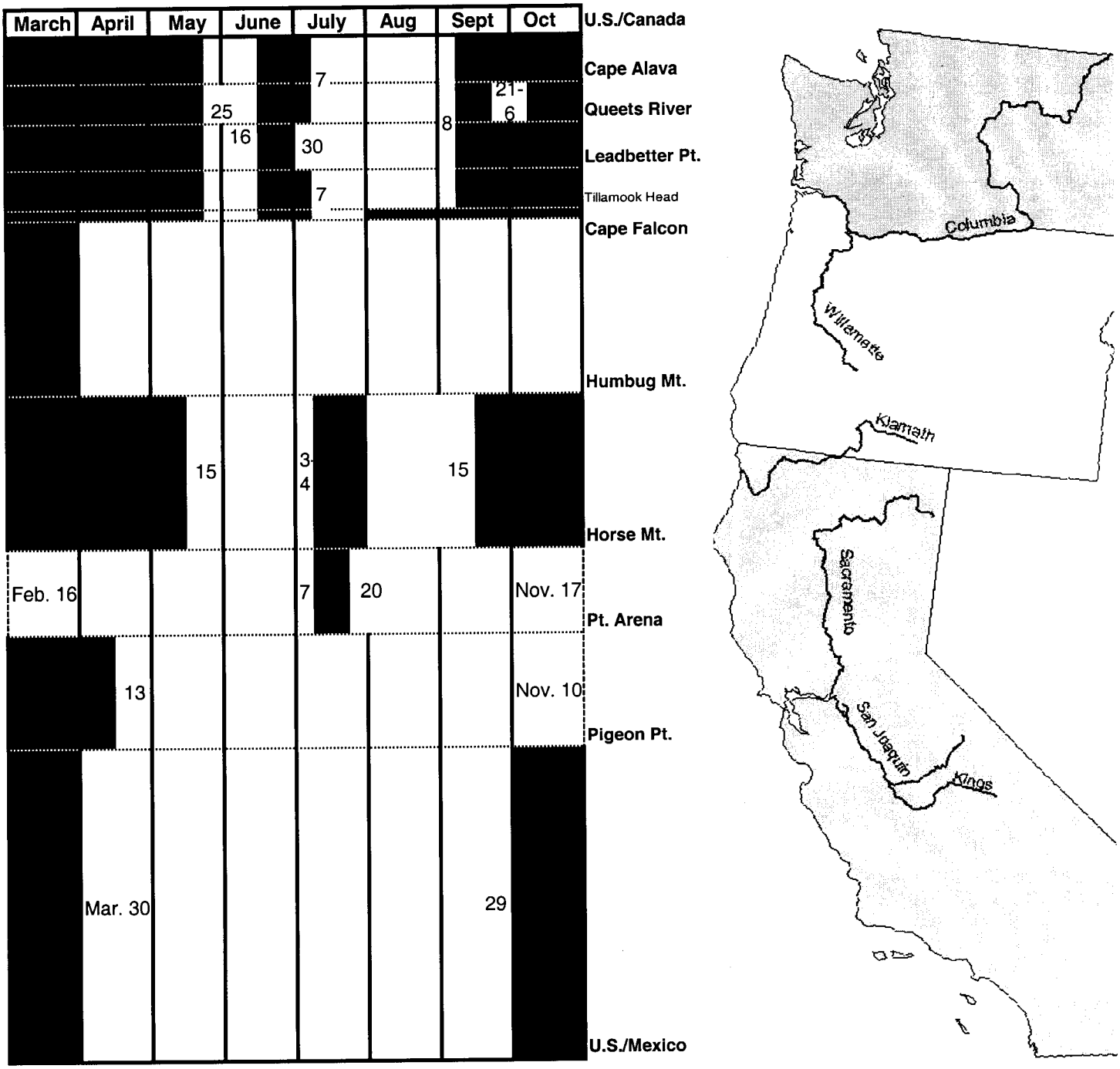


TABLE 3. Council-adopted **treaty Indian** ocean troll salmon fishery management measures, 2002. (Page 1 of 1)

Tribe and Area Boundaries[a/]	Open Seasons	Salmon Species	Minimum Size[b/] (Inches) Chinook	Coho	Special Restrictions by Area
S'KLALLAM - Washington State Statistical Area 4B (All)	May 1 thru earlier of June 30 or chinook quota.[c/]	All except coho	24	-	Barbless hooks. No more than 8 fixed lines per boat; 72 hook maximum per boat.
	July 1 thru earlier of Sept. 15 or chinook or coho quota.[c/]	All	24	16	
MAKAH - Washington State Statistical Area 4B and that portion of the FMA north of 48°02'15" N. lat. (Norwegian Memorial) and east of 125°44'00" W. long.	May 1 thru earlier of June 30 or chinook quota.[c/]	All except coho	24	-	Barbless hooks. No more than 8 fixed lines per boat or no more than 4 hand-held lines per person.
	July 1 thru earlier of Sept. 15 or chinook or coho quota.[c/]	All	24	16	
QUILEUTE - That portion of the FMA between 48°07'36" N. lat. (Sand Pt.) and 47°31'42" N. lat. (Queets River)	May 1 thru earlier of June 30 or chinook quota.[c/]	All except coho	24	-	Barbless hooks. No more than 8 fixed lines per boat.[d/]
	July 1 thru earlier of Sept. 15 or chinook or coho quota.[c/]	All	24	16	
HOH - That portion of the FMA between 47°54'18" N. lat. (Quillayute River) and 47°21'00" N. lat. (Quinault River)	May 1 thru earlier of June 30 or chinook quota.[c/]	All except coho	24	-	Barbless hooks. No more than 8 fixed lines per boat.[d/]
	July 1 thru earlier of Sept. 15 or chinook or coho quota.[c/]	All	24	16	
QUINAULT - That portion of the FMA between 47°40'06" N. lat. (Destruction Island) and 46°53'18" N. lat. (Point Chehalis)	May 1 thru earlier of June 30 or chinook quota.[c/]	All except coho	24	-	Barbless hooks. No more than 8 fixed lines per boat.[d/]
	July 1 thru earlier of Sept. 15 or chinook or coho quota.[c/]	All	24	16	

a/ All boundaries may be changed to include such other areas as may hereafter be authorized by a Federal court for that tribe's treaty fishery.

b/ Applicable lengths, in inches, for dressed, head-off salmon, are 18 inches for chinook and 12 inches for coho. Minimum size and retention limits for ceremonial and subsistence harvest are as follows:

Makah Tribe - None

Quileute, Hoh and Quinault tribes - Not more than 2 chinook longer than 24 inches in total length may be retained per day. Chinook less than 24 inches total length may be retained.

c/ The overall treaty troll ocean quotas are 60,000 chinook and 60,000 coho. The overall chinook quota is divided into 30,000 chinook for the May/June chinook-directed fishery and 30,000 chinook for the July through Sept. all-salmon season. If the chinook quota for the May/June fishery is not fully utilized, the excess fish cannot be transferred into the later all-salmon season. The quotas include troll catches by the S'Klallam and Makah tribes in Washington State Statistical Area 4B from May 1 thru Sept. 30.

d/ The area within a 6 nautical mile radius of the mouths of the Queets River (47°31'42" N. lat.) and the Hoh River (47°45'12" N. lat.) will be closed to commercial fishing. A closure within 2 nautical miles of the mouth of the Quinault River (47°21'00" N. lat.) may be enacted by the Quinault Nation and/or the State of Washington and will not adversely affect the Secretary of Commerce's management regime.

TABLE 4. Chinook and coho **harvest quotas and guidelines (*)** (thousands of fish) for Council-adopted ocean salmon fisheries, 2002. (Page 1 of 1)

Fishery or Quota Designation	Chinook	Coho
NORTH OF CAPE FALCON		
TREATY INDIAN COMMERCIAL TROLL[a/]	60.0	60.0
NON-INDIAN COMMERCIAL TROLL		
Canada to Cape Falcon (May-June)	50.0	-
Canada to Cape Falcon (July-Sept.)[b/]	32.5	5.0
Subtotal Non-Indian Commercial Troll	82.5	5.0
RECREATIONAL (selective coho fisheries)[b/]		
Canada to Cape Falcon (May/June)[b/]	20.0	-
U.S.-Canada Border to Cape Alava[b/]	2.6*	11.8
Cape Alava to Queets River[b/]	1.7*	2.9
Queets River to Leadbetter Pt.[b/]	32.0*	39.3
Leadbetter Pt. to Cape Falcon[b/]	11.2*	55.7
Subtotal Recreational	67.5	109.7
TOTAL NORTH OF CAPE FALCON	210.0	174.7
SOUTH OF CAPE FALCON		
COMMERCIAL TROLL (all except coho)		
Humbug Mt. to OR-CA border (June-Sept.)	9.5	-
Oregon-California Border to Humboldt S. Jetty (Aug.-Sept.)	13.0	-
Horse Mt. to Pt. Arena (July)	10.0	-
Subtotal Troll	32.5	-
RECREATIONAL		
Cape Falcon to Humbug Mt.[b/]	-	22.5
TOTAL SOUTH OF CAPE FALCON	32.5	22.5

a/ For the Makah encounter rate study, legal sized fish retained in open periods will be included in the tribal quota.
b/ The coho quota is a landed catch of coho with a healed adipose fin clip.

TABLE 5. Projected **key stock escapements** (thousands of fish) or management criteria for Council-adopted ocean salmon fisheries, 2002.[a/] (Page 1 of 2)

Key Stock/Criteria	Projected Ocean Escapement[b/] or Other Criteria	Spawner Objective or Other Comparative Standard as Noted	
CHINOOK			
Upper Columbia River Brights	273.8	57.3	Minimum ocean escapement to attain 43.5 adults over McNary Dam, with normal distribution and no mainstem harvest.
Mid-Columbia Brights	93.7	16.6	Minimum ocean escapement to attain 5.75 adults for Bonneville Hatchery and 2.0 for Little White Salmon Hatchery egg-take, assuming average conversion and no mainstem harvest.
Lower Columbia River Hatchery Tules	133.0	23.4	Minimum ocean escapement to attain 14.3 adults for hatchery egg-take, with average conversion and no lower river mainstem or tributary harvest.
Lower Columbia River Natural Tules	45%	≤49%	ESA guidance met by a total (ocean and freshwater) adult equivalent fishery exploitation rate of no more than 49.0% on Coweeman tules.
Lewis River Wild (threatened)	18.3	5.7	MSY spawner goal for North Lewis River.
Spring Creek Hatchery Tules	136.0	11.1	Minimum ocean escapement to attain 7.0 adults for Spring Creek Hatchery egg-take, assuming average conversion and no mainstem harvest.
Snake River Fall (threatened) SRFI	47%	≤70.0%	Of the1988-1993 base period age 3/4 adult equivalent fishery exploitation rate for all ocean fisheries (ESA jeopardy standard).
Klamath River Fall	35.0	35.0	Minimum number of adult spawners to natural spawning areas.
Federally recognized tribal harvest	50%	50.0%	Equals 50.4 (thousand) fish for Yurok and Hoopa tribal fisheries.
Age 4 ocean harvest rate	12.9%	≤16.0%	ESA jeopardy standard for threatened California coastal chinook.
KMZ sport fishery allocation	11.0%	-	None specified for 2002.
CA/OR troll fishery allocation	48.7%/51.3%	-	None specified for 2002.
River recreational fishery allocation	40.7%	≥15.0%	Agreed to by California Fish and Game Commission; Equals 20.5 (thousand) fish for recreational inriver fisheries.
Sacramento River Winter (endangered)	Yes		Duration and timing of commercial and recreational seasons south of Point Arena do not differ substantially relative to those of 2000 and 2001.
Sacramento River Fall	298.5	122.0-180.0	Sacramento River fall natural and hatchery adult spawners.

TABLE 5. STT analysis of projected **key stock escapements** (thousands of fish) or management criteria for tentative ocean salmon fisheries, 2002.[a/] (Page 2 of 2)

Key Stock/Criteria	Projected Ocean Escapement[b/] or Other Criteria	Spawner Objective or Other Comparative Standard as Noted
COHO		
Interior Fraser (Thompson River)	9.1%	≤10% Total exploitation rate for all US fisheries south of the US/Canada border.
Skagit	38% (6.2%) 79.9	≤60% 2001 Annual management ceiling: total exploitation rate[c/] 30.0 MSP level of adult spawners Identified in FMP.
Stillaguamish	35% (7.8%) 14.5	≤35% 2001 Annual management ceiling: total exploitation rate[c/] 17.0 MSP level of adult spawners Identified in FMP.
Snohomish	34% (7.8%) 86.7	≤40% 2001 Annual management ceiling: total exploitation rate[c/] 70.0 MSP level of adult spawners Identified in FMP.
Hood Canal	44% (6.2%) 25.6	≤45% 2001 Annual management ceiling: total exploitation rate[c/] 21.5 MSP level of adult spawners Identified in FMP.
Strait of Juan de Fuca	17% (5.1%) 22.0	≤40% 2001 Annual management ceiling: total exploitation rate[c/] 12.8 MSP level of adult spawners Identified in FMP.
COASTAL NATURAL:		
Quillayute Fall	18.5	6.3-15.8 MSY adult spawner range (not annual target). Annual management objectives may be different and are subject to agreement between WDFW and the treaty tribes under U.S. District Court orders.
Hoh	6.9	2.0-5.0 MSY adult spawner range (not annual target). Annual management objectives may be different and are subject to agreement between WDFW and the treaty tribes under U.S. District Court orders.
Queets Wild	10.2	5.8-14.5 MSY adult spawner range (not annual target). Annual management objectives may be different and are subject to agreement between WDFW and the treaty tribes under U.S. District Court orders.
Queets Supplemental	1.6	-
Grays Harbor	50.3	35.4 MSP level of adult spawners. Annual management objectives may be different and are subject to agreement between WDFW and the treaty tribes under U.S. District Court orders.
Oregon Coastal Natural (threatened)	12.3%	≤15.0% ESA jeopardy standard for total (marine and freshwater) fishery exploitation rate. ≤12.5% To meet Council guidance for protection of Oregon state ESA endangered lower Columbia coho.
Northern California (threatened)	7.5%	≤13.0% ESA jeopardy standard for surrogate R/K hatchery coho marine fishery exploitation rate.
HATCHERY:		
Columbia River Early	98.3	38.7 Minimum ocean escapement to attain hatchery egg-take goal of 19.6 early adult coho, with average conversion and no mainstem or tributary fisheries.
Columbia River Late	53.1	19.4 Minimum ocean escapement to attain hatchery egg-take goal of 15.2 late adult coho, with average conversion and no mainstem or tributary fisheries.

a/ Projections in the table assume a WCVI mortality of 2,000 coho; southeast Alaska TAC of 370,000 chinook per PST agreement; WCVI troll catch of 97,500 chinook (includes chinook in the fall of 2001).

b/ Ocean escapement is the number of salmon escaping ocean fisheries and entering freshwater with the following clarifications. Ocean escapement for Puget Sound stocks is the estimated number of salmon entering Area 4B that are available to U.S. net fisheries in Puget Sound and spawner escapement after impacts from the Canadian, U.S. ocean, and Puget Sound troll and recreational fisheries have been deducted. Numbers in parentheses represent Council area exploitation rates for Puget sound coho stocks. For Columbia River early and late coho stocks, ocean escapement represents the number of coho after the Buoy 10 fishery. The escapement numbers provided for OCN coho are spawners in SRS accounting.

c/ Annual management objectives may be different than FMP goals, and are subject to agreement between WDFW and the treaty tribes under U.S. District Court orders. Total exploitation rate includes Alaskan, Canadian, Council area, Puget Sound and freshwater fisheries, and is calculated as total fishing mortality divided by total fishing mortality plus spawning escapement.

TABLE 6. Projected chinook and coho **harvest impacts** for Council-adopted ocean salmon fisheries, 2002. (Page 1 of 1)

Area and Fishery	2002 Catch Projection	2002 Bycatch Mortality[a/] Projection	Observed in 2001 Catch	Observed in 2001 Bycatch Mortality
OCEAN FISHERIES:[b/]		**CHINOOK (thousands of fish)**		
NORTH OF CAPE FALCON				
Treaty Commercial Troll	60.0	7.7	28.1	5.3
Non-Indian Commercial Troll	82.5	20.9	26.5	15.5
Recreational	67.5	8.3	25.6	3.8
CAPE FALCON TO HUMBUG MT.				
Commercial Troll	140.0	15.4	267.0	29.3
Recreational	13.5	1.5	17.4	1.9
HUMBUG MT. TO HORSE MT.				
Commercial Troll	24.5	2.7	9.7	1.1
Recreational	21.0	2.3	19.9	2.2
SOUTH OF HORSE MT.				
Commercial	404.8	44.5	173.4	19.1
Recreational	130.9	14.4	84.5	9.3
TOTAL OCEAN FISHERIES				
Commercial Troll	711.8	91.2	504.7	70.3
Recreational	232.9	26.5	147.4	17.2
INSIDE FISHERIES:				
Buoy 10	21.2	NA	12.7	2.3
OCEAN FISHERIES:		**COHO (thousands of fish)**		
NORTH OF CAPE FALCON				
Treaty Commercial Troll	60.0	3.2	57.5	2.8
Non-Indian Commercial Troll[c/]	5.0	21.2	17.5	5.3
Recreational[c/]	109.7	23.2	207.5	24.0
SOUTH OF CAPE FALCON				
Commercial Troll	0.0	8.9	-	25.1
Recreational[c/]	22.5	10.1	56.5	11.4
TOTAL OCEAN FISHERIES				
Commercial Troll	65.0	33.3	75.0	33.2
Recreational	132.2	33.3	264.0	35.4
INSIDE FISHERIES:				
Area 4B	-	-	-	-
Buoy 10[c/]	20.0	3.1	132.0	11.9

a/ The bycatch mortality reported in this table consists of hook-and-release and drop-off mortality of chinook and coho salmon in fisheries which have special species retention restrictions (e.g., all-salmon-except-coho or all-salmon-except-chinook seasons, or selective fisheries for marked coho). In general, the bycatch mortality rate parameters used by the Council for both chinook and coho in fisheries using barbless hooks are:
Commercial - 26% of fish hooked-and-released plus 5% of total encounters (drop-off, predation, noncompliance, etc.).
Sport north of Pt. Arena - 14% of fish hooked-and-released plus 5% of total encounters (drop-off, etc.).
Sport south of Pt. Arena - 23% (weighted average of California style mooching and trolling) of fish hooked-and-released plus 5% of total encounters (drop-off, etc.).

b/ Includes Oregon territorial water, late season chinook fisheries.

c/ Includes one or more selective fishery options that allow only retention of hatchery coho with a healed adipose fin clip.

TABLE 7. Expected coastwide Oregon coastal natural (**OCN**) and Rogue/Klamath (**RK**) coho **exploitation** rates by fishery for Council-adopted ocean salmon fisheries, 2002. (Page 1 of 1)

	Exploitation Rate (Percent)	
	OCN	RK
Fishery	Total	Total
SOUTHEAST ALASKA	0.0	0.0
BRITISH COLUMBIA	0.0	0.0
PUGET SOUND/STRAITS	0.1	0.0
NORTH OF CAPE FALCON		
Treaty Indian Troll	0.6	0.0
Recreational	1.4	0.1
Non-Indian Troll	0.7	0.0
SOUTH OF CAPE FALCON		
Recreational:		
Cape Falcon to Humbug Mt.	2.2	0.1
Humbug Mt. OR/CA border (KMZ)	0.5	0.5
OR/CA border to Horse Mt. (KMZ)	0.8	1.6
Fort Bragg	0.7	1.3
South of Pt. Arena	0.8	1.3
Troll:		
Cape Falcon to Humbug Mt.	1.4	0.1
Humbug Mt. OR/CA border (KMZ)	0.1	0.1
OR/CA border to Horse Mt. (KMZ)	0.1	0.6
Fort Bragg	0.4	0.6
South of Pt. Arena	1.1	1.1
BUOY 10	0.5	0.0
ESTUARY/FRESHWATER	1.0	0.2
TOTAL	12.3	7.7

TABLE 8. **Expected mark rate** for Council-adopted ocean salmon fisheries with **selective coho retention**, 2002. (Page 1 of 1)

Area	Fishery	July	August	September	2001 Observed
North of Cape Falcon					
Neah Bay (Area 4)	Recreational	53.2%	44.7%	-	39%
	Non-Indian Troll	-	-	-	NA
La Push (Area 3)	Recreational	47.7%	47.8%	-	31%
	Non-Indian Troll	-	-	-	NA
Westport (Area 2)	Recreational	64.7%	57.8%	-	58%
	Non-Indian Troll	-	-	-	44%
Columbia River (Area 1)	Recreational	81.3%	71.2%	-	78%
	Non-Indian Troll	68.7%	63.9%	63.0%	67%
Buoy 10	Recreational	-	69.5%	69.5%	69%
South of Cape Falcon					
Cape Falcon to Humbug Mt.	Recreational	-	-	-	-
Tillamook	Recreational	64.9%	-	-	65%
Newport	Recreational	65.1%	-	-	68%
Coos Bay	Recreational	61.0%	-	-	72%

TABLE 9. Estimates of **exvessel value** for Council-adopted, non-Indian **commercial troll** regulations. (Page 1 of 1)

Management Area	Exvessel Value (thousands of dollars)[a/] Projection for 2002[b/]	Estimate for 2001	Percent Change from Estimated 2001 Values	1976-1990 Average[c/]	Percent Change from 1976-1990 Average
NORTH OF CAPE FALCON	1,680	582	189%	6,196	-73%
Cape Falcon to Humbug Mt.	2,347	4,330	-46%	14,849	-84%
Humbug Mt to Horse Mt.	551	213	158%	7,467	-93%
Horse Mt. to Pt. Arena	1,508	271	457%	6,929	-78%
South of Pt. Arena	8,362	4,054	106%	14,123	-41%
TOTAL SOUTH OF CAPE FALCON	12,767	8,868	44%	43,368	-71%
WEST COAST TOTAL	14,448	9,450	53%	49,563	-71%

a/ Exvessel values are not comparable to the community income impacts shown in Table 10.
b/ Dollar value estimates are based on expected catches in the management area, and 2001 exvessel prices and average weights per fish.
c/ All dollar values are adjusted to 2001 real values.

TABLE 10. Estimates of **angler trips** and coastal community **income** generated for the Council-adopted **recreational** ocean salmon fishery regulations compared to 2001 and the 1976-1990 average. (Page 1 of 1)

Management Area	Angler Trips (thousands) Projection for 2002[b/]	Estimate for 2001	1976-1990 Average	Coastal Community Income Impacts[a/] (thousands of dollars) Projection for 2002	Estimate for 2001	1976-1990 Average	Projected Percent Change in Income Impacts Compared to 2001 Estimate	Compared to 1976-1990 Average
NORTH OF CAPE FALCON	113	137	271	6,547	7,943	15,742	-18%	-58%
Cape Falcon to Humbug Mt.	46	71	184	2,415	3,721	9,899	-35%	-76%
Humbug Mt. to Horse Mt.	41	46	117	1,854	2,104	5,726	-12%	-68%
Horse Mt. to Pt. Arena	23	25	12	1,558	1,742	763	-11%	104%
South of Pt. Arena	164	163	116	14,468	14,401	12,170	0%	19%
TOTAL S. OF CAPE FALCON	274	306	429	20,295	21,969	28,558	-8%	-29%
WEST COAST TOTAL	386	443	701	26,842	29,911	44,300	-10%	-39%

a/ Income impacts are totals for individual communities. Impacts between communities in the management area have not been counted. Income impacts are not comparable to the exvessel values shown in Table 9. All dollar values are adjusted to 2001 real values.
b/ The estimates for the number of trips south of Cape Falcon are based on comparison of the seasons proposed for 2002 to those in place in 2001 and the associated effort levels. The estimates for trips north of Cape Falcon are based on 2001 season retained catch per angler.

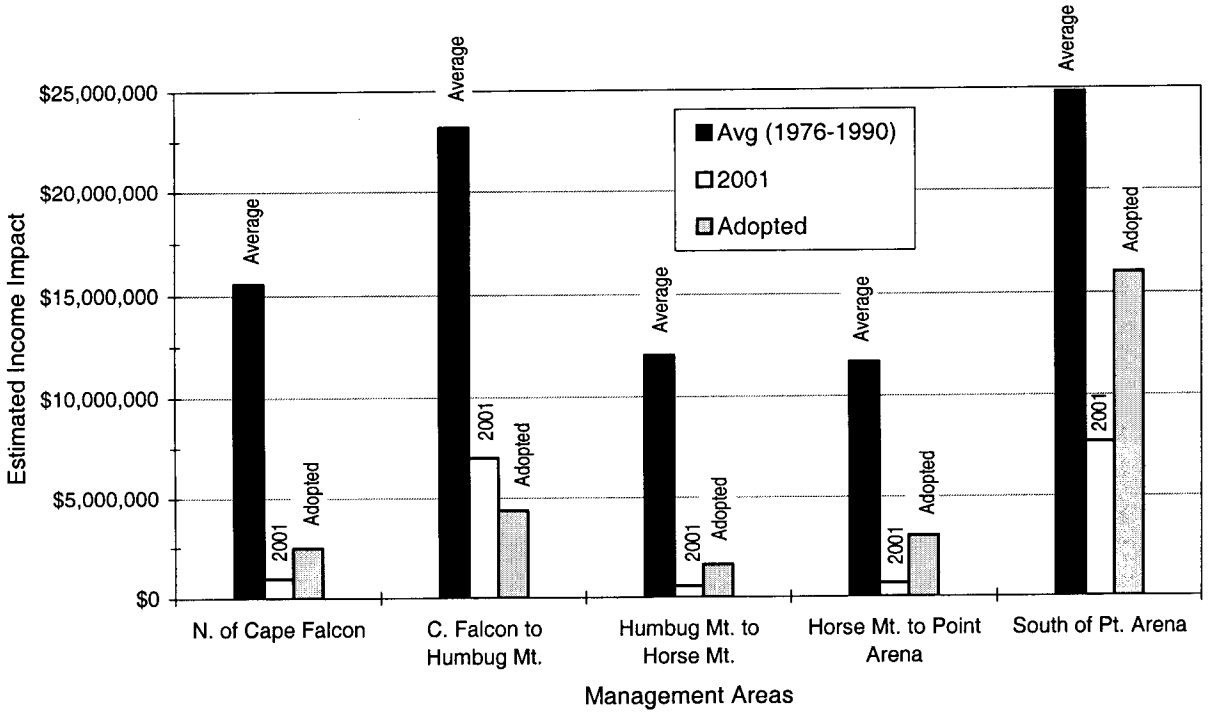


Figure 3. Projected coastal community income impacts associated with the 2002 commercial troll fishery under Council-adopted management measures compared to 2001 and the 1976-1990 average in real (inflation adjusted) dollars. Note: Estimates are based on landing area and include projections of out-of-area catch.

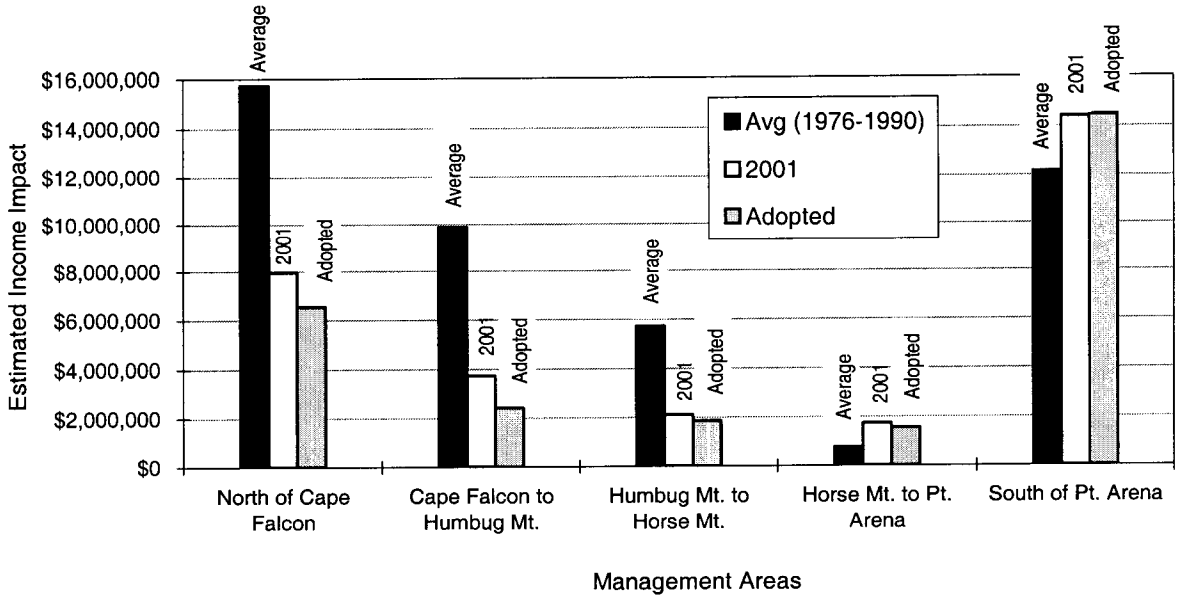


Figure 4. Projected coastal community income impacts associated with the 2002 recreational fishery under Council-adopted management measures compared to 2001 and the 1976-1990 average in real (inflation adjusted) dollars.

APPENDIX A
BIOLOGICAL EVALUATION OF 2002 COUNCIL OCEAN SALMON FISHERY IMPACTS ON FISH SPECIES LISTED UNDER THE ENDANGERED SPECIES ACT

INTRODUCTION

Amendment 12 to the Pacific Coast Salmon Fishery Management Plan (FMP) requires the Pacific Fishery Management Council (Council) to manage fisheries consistent with standards developed by the National Marine Fisheries Service (NMFS) regarding actions necessary to protect species listed under the Endangered Species Act (ESA). NMFS approved Amendment 14 on September 27, 2000, but it does not change the requirements of Amendment 12.

Since 1989, NMFS has listed 16 evolutionarily significant units (ESU) of salmon under the ESA (Table A-1). As the listings have occurred, NMFS has initiated formal section 7 consultations and issued biological opinions (Table A-2) that consider the impacts to listed salmonid species, and some salmonid species proposed for listing, resulting from proposed implementation of the FMP, or in some cases, from proposed implementation of the annual management measures. NMFS has also reinitiated consultation on certain ESUs when new information has become available on the status of the stocks or on the impacts of the FMP on the stocks. Some opinions have concluded that implementation of the FMP is not likely to jeopardize the continued existence of certain listed ESUs. Other opinions have found the FMP is likely to jeopardize certain listed ESUs, and have identified reasonable and prudent alternatives (consultation standards) that would avoid the likelihood of jeopardizing the continued existence of the ESU under consideration.

TABLE A-1. Salmon ESUs listed under the Endangered Species Act.

Species	Evolutionarily Significant Unit	Status	Federal Register Notice
Chinook Salmon (O. tshawytscha)	Sacramento River Winter	Endangered	54 FR 32085 8/1/89
	Snake River Fall	Threatened	57 FR 14653 4/22/92
	Snake River Spring/Summer	Threatened	57 FR 14653 4/22/92
	Puget Sound	Threatened	64 FR 14308 3/24/99
	Lower Columbia River	Threatened	64 FR 14308 3/24/99
	Upper Willamette River	Threatened	64 FR 14308 3/24/99
	Upper Columbia River Spring	Endangered	64 FR 14308 3/24/99
	Central Valley Spring	Threatened	64 FR 50394 9/16/99
	California Coastal	Threatened	64 FR 50394 9/16/99
Chum Salmon (O. keta)	Hood Canal Summer-Run	Threatened	64 FR 14508 3/25/99
	Columbia River	Threatened	64 FR 14508 3/25/99
Coho Salmon (O. kisutch)	Central California Coastal	Threatened	61 FR 56138 10/31/96
	S. Oregon/ N. California Coastal	Threatened	62 FR 24588 5/6/97
	Oregon Coastal	Threatened	63 FR 42587 8/10/98
Sockeye Salmon (O. nerka)	Snake River	Endangered	56 FR 58619 11/20/91
	Ozette Lake	Threatened	64 FR 14528 3/25/99

TABLE A-2. NMFS' biological opinions on ocean fisheries implemented under the FMP and duration of the proposed action covered by each opinion.

Date	ESU covered and effective period
March 8, 1996	Snake River chinook and sockeye (until reinitiated), Sacramento River winter chinook (5 years)
April 28, 1999	Oregon coastal coho, S. Oregon/ N. California coastal coho, Central California coastal coho (until reinitiated)
April 28, 2000	Central Valley spring chinook and California coastal chinook (until reinitiated)
April 28, 2000	Upper Columbia River spring chinook, Upper Willamette River chinook, Lower Columbia River chinook, Puget Sound chinook (1 year)
April 26, 2001	Puget Sound chinook 4(d) limit (2 years).
April 30, 2001	Lower Columbia River chinook, Upper Willamette chinook, Upper Columbia spring chinook, Lake Ozette sockeye, ten steelhead ESUs and Columbia River chum (until reinitiated).

At the March meeting, the Council initiated the FMP amendment process to specify recovery and long-term conservation objectives for Sacramento River winter chinook and Central Valley spring chinook. The amendment is on a schedule for completion by November 2003. NMFS anticipates reinitiating its consultation prior to the 2004 season to consider the results of the proposed amendment. In the meantime, NMFS will issue a two year biological opinion prior to May 1 that will accommodate the amendment process. The interim consultation standard requires that the duration and timing of the commercial and recreational seasons south of Point Arena not change substantially relative to the 2000 and 2001 seasons.

NMFS, in a March 8, 2002 letter to the Council, provided guidance on protective measures for listed species for the 2002 fishing season. The letter summarized the requirements of NMFS' biological opinions and 4(d) rules on the effects of the FMP on listed salmon and provided the anticipated consultation standards of the biological opinion which are to be applied for the 2002 management season. The ESA consultation standards and the exploitation rate (or other criteria) projected for the 2002 management measures are presented in Table A-3. Some listed stocks are either rarely caught in Council fisheries (e.g. spring chinook from the upper Columbia and Willamette rivers) or already receive sufficient protection from FMP and ESA consultation standards for other listed ESUs (e.g. Central Valley spring chinook). NMFS has determined that management actions designed to limit catch from these ESUs beyond what will be provided by harvest constraints for other stocks are not necessary.

Additional listed salmonid ESUs that are found within the Council area, but which are not significantly impacted by Council managed fisheries, include:

Sockeye

Snake River (endangered)
Ozette Lake Sockeye (threatened)

Chum

Columbia River (threatened)
Hood Canal summer (threatened)

Steelhead

Southern California (endangered)
South-central California coast (threatened)
Upper Columbia River (endangered)
Middle Columbia River (threatened)
Snake River Basin (threatened)
Central Valley, California (threatened)
Central California coast (threatened)
Upper Willamette River (threatened)
Lower Columbia River (threatened)
Northern California (threatened)

TABLE A-3. Impacts of 2002 management measures on listed evolutionarily significant units.

ESU	Stock Representation in FMP	ESA Consultation Standard		2002 Management Measures	
Central Valley spring chinook - threatened	Sacramento River spring	No specific jeopardy standard. Standards for Sacramento Winter chinook cover this ESU for 2002 and 2003.		Delay opening the recreational fishery between Pt. Arena and Pigeon Pt. until April 13 and between Pigeon Pt and the U.S.-Mexico border until March 30.	
Sacramento River winter chinook - endangered	Sacramento River winter	2002 Biological Opinion will require the duration and timing of 2002 commercial and recreational fisheries south of Point Arena not change substantially relative to 2000 and 2001.		Delay opening the recreational fishery between Pt. Arena and Pigeon Pt. until April 13 and between Pigeon Pt and the U.S.-Mexico border until March 30.	
California Coastal chinook - threatened	Eel, Mattole, and Mad Rivers	≤16% age-4 ocean harvest rate on Klamath River fall chinook.		12.9% age-4 ocean harvest rate	
Lower Columbia River chinook - threatened	• Cowlitz, Kalama, Lewis spring • Lower River Hatchery fall • North Fork Lewis River fall	• No specific requirements • Total ocean and freshwater adult equivalent exploitation rate on Coweeman tule fall chinook ≤ 49%. • 5,700 MSY level adult spawning escapement		• Meet hatchery escapement goals 45.0% Total ocean and freshwater AEQ exploitation rate 18,300 adults to the Columbia River mouth.	
Upper Willamette chinook - threatened	Upper Willamette River spring	No specific requirements. Rare occurrence in Council fisheries		North of Falcon troll fisheries do not begin prior to May 1	
Upper Columbia River spring chinook - endangered	Upper Columbia River spring	No specific requirements. Rare occurrence in Council fisheries		North of Falcon troll fisheries do not begin prior to May 1	
Snake River fall chinook - threatened	Snake River fall	≤70% of the 1988-1993 average adult equivalent age-3/age-4 exploitation rate for all ocean fisheries		46.5% of 1988-1993 average age 3/4 AEQ ocean exploitation rate	
Snake River spring/summer chinook - threatened	Snake River spring/summer	No specific requirements. Rare occurrence in Council fisheries		North of Falcon troll fisheries do not begin prior to May 1	
Puget Sound chinook - threatened		Exploitation Rate	Spawner Escapement	Exploitation Rate	Spawner Escapement
	• Dungeness spring	• <10% So U.S.		5%	240
	• Elwha summer/fall	• <10% So U.S.		5%	2,360
	• Skokomish summer/fall	• 15% Preterm. So U.S.	1,200	13%	1,270
	• Nooksack spring	• 7% So U.S.		7%	1,300
	• Skagit summer/fall	• 52% Total		26%	17,100
	• Skagit spring	• 42% Total		23%	1,500
	• Stillaguamish summer/fall	• 25% Total		14%	2,200
	• Snohomish summer/fall	• 32% Total		19%	4,400
	• Cedar River summer/fall	• 15% Preterm So U.S.		12%	790
	• White River spring	• 17% Total		17%	1,300
	• Green River summer/fall	• 15% Preterm So U.S.	5,800	10%	7,700
	• Nisqually summer/fall	• NA	1,100		1,800
	• Mid-Hood Canal fall	• 15% So U.S.		13%	520
Central California Coast coho - threatened	Not yet represented	No retention of coho in commercial and recreational fisheries off California.		No retention of coho in California fisheries	
S. Oregon/N. California Coastal coho - threatened	• S. Oregon coast natural • Northern California	≤13% marine exploitation rate on Rogue/Klamath hatchery coho.		7.5% marine exploitation rate	
Oregon Coast coho - threatened	• S . Central OR coast • N. Central OR coast • N. Oregon coast natural	13%-35% (15% in 2002) combined marine/freshwater exploitation rate, depending on parent escapement and ocean survival trends (Amendment 13).		12.3% total (marine and freshwater combined) exploitation rate	

APPENDIX B
FORT BRAGG TROLL EFFORT PREDICTOR FOR 2002

INTRODUCTION

The Fort Bragg (FB) troll fishing effort predictor used in evaluating the 2002 Preseason Report II regulatory options was based on 1986 to 1990 observed levels of effort, and was in addition to the fishing effort expected in the San Francisco (SF) and Monterey (MO) areas. As directed by the Council, the STT undertook a review of this effort predictor prior to evaluation of the 2002 Preseason Report III Council-adopted regulation package, and as a result revised the predictor as described below.

For 2002, the STT assumed that the boats participating in a FB fishery will come out of the fleet currently operating off SF and MO, and the question was what proportion of this fleet will transfer to FB when it opens. When all three areas are open, we assumed that the current fleet will distribute itself as it did in the 1986 to 1990 period, the most recent five-year period when all three areas were simultaneously open. The STT believes this approach may overestimate effort off FB due to the loss of fleet infrastructure in that port, and if so there will be a corresponding underestimate of effort off SF and MO. If the revised FB effort predictor is biased high it will result in a conservative estimate of both OCN coho and Klamath fall chinook impacts, and an overestimate of Sacramento River fall chinook escapement; however, this is not a concern for 2002 as Sacramento River fall chinook escapement is expected to be far above its goal range.

PREDICTOR

First, estimate average effort per day open (β) for each area (a = FB, SF, MO) and month (m = July, August) during the 1986 to 1990 period using the ratio estimator

$$\hat{\beta}_{a,m}^{86-90} = \frac{\sum_{y=1986}^{1990} f_{a,m,y}}{\sum_{y=1986}^{1990} d_{a,m,y}},$$

where f is the observed effort (vessel days fished), and d is the days open for the fishery. Second, estimate the month-specific distribution of effort across the three areas during the 1986 to 1990 period as

$$\hat{p}_{a,m}^{86-90} = \frac{\hat{\beta}_{a,m}^{86-90}}{\sum_{a} \hat{\beta}_{a,m}^{86-90}}.$$

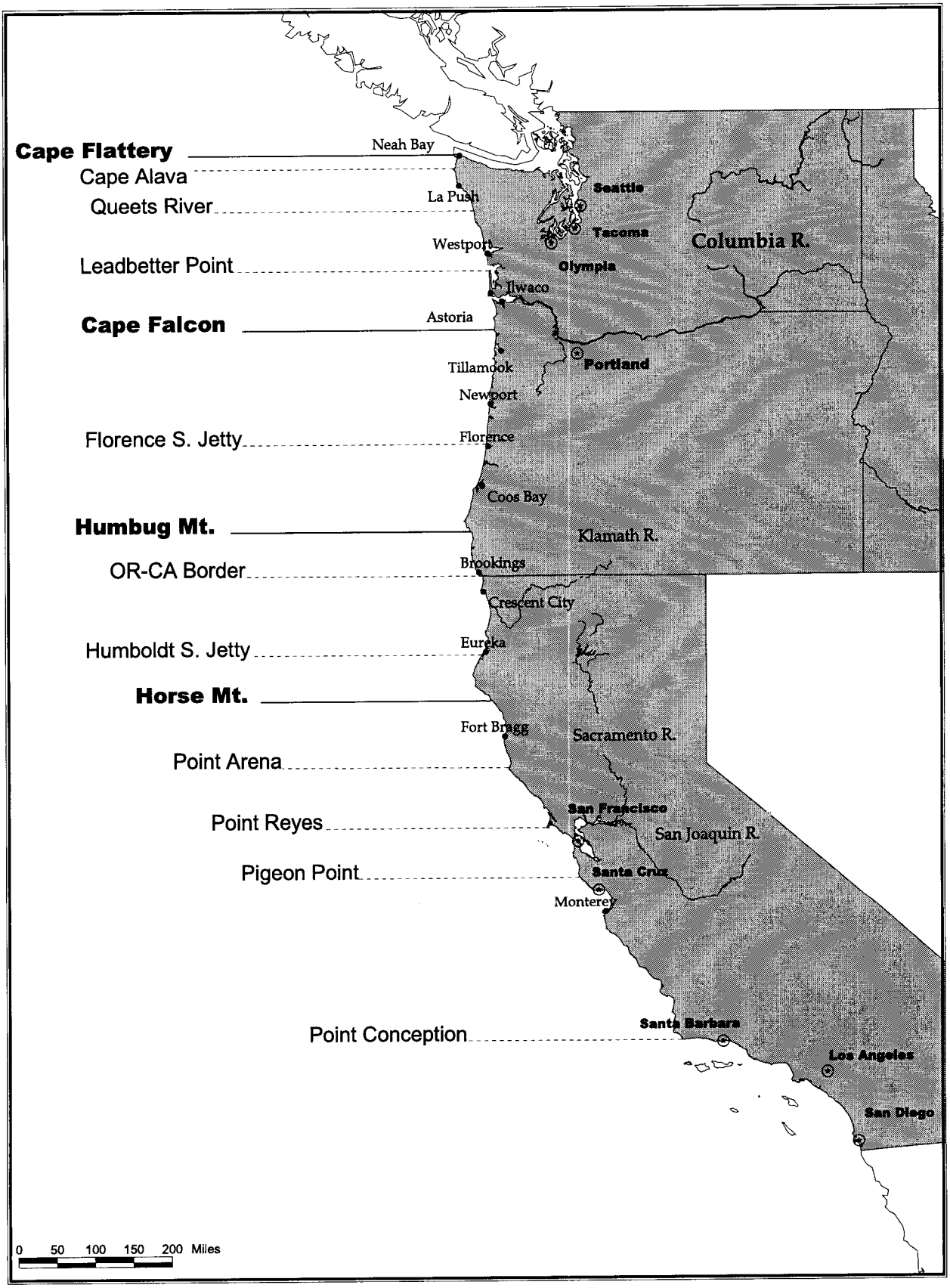
Third, estimate the average effort per day open for the SF/MO fleet as a whole during the 1991to 2001 period as

$$\hat{\beta}_{\mathrm{SF+MO},m}^{91-01} = \hat{\beta}_{\mathrm{SF},m}^{91-01} + \hat{\beta}_{\mathrm{MO},m}^{91-01},$$

where $\hat{\beta}_{\mathrm{SF},m}^{91-01}$ and $\hat{\beta}_{\mathrm{MO},m}^{91-01}$ are the respective ratio estimates of average effort per day open for the two areas over this period. Fourth, assume that SF and MO are open or closed together as a block and that FB is only open some portion of the time that the SF/MO block is open (as is the case in 2002). Fifth, forecast 2002 total effort for area a in month m as

$$\hat{f}_{a,m}^{02} = \left(\hat{\beta}_{\text{SF+MO},m}^{91-01} \times \hat{p}_{a,m}^{86-90} \times d_{\text{FB},m}^{02}\right) + \left(\hat{\beta}_{a,m}^{91-01} \times \left(d_{a,m}^{02} - d_{\text{FB},m}^{02}\right)\right).$$

In the above equation, the first component represents the projected effort for area a, month m when FB is open, and the second component represents the projected effort for area a, month m when FB is closed $\left(\hat{\beta}_{\text{FB},m}^{91-01} \equiv 0\right)$.


Cape Flattery
Cape Alava
Queets River
Leadbetter Point
Cape Falcon
Florence S. Jetty
Humbug Mt.
OR-CA Border
Humboldt S. Jetty
Horse Mt.
Point Arena
Point Reyes
Pigeon Point
Point Conception
Neah Bay
La Push
Westport
Ilwaco
Astoria
Tillamook
Newport
Florence
Coos Bay
Brookings
Crescent City
Eureka
Fort Bragg
Seattle
Tacoma
Olympia
Portland
Columbia R.
Klamath R.
Sacramento R.
San Francisco
San Joaquin R.
Santa Cruz
Monterey
Santa Barbara
Los Angeles
San Diego
0 50 100 150 200 Miles